

WHAT IS CLAIMED IS:

1. A dual band antenna adapted for a wireless communication device, comprising:  
an insulative substrate;  
a conductive element disposed on the substrate, the conductive element including a ground portion, a first radiating portion, a second radiating portion, a first connecting portion connecting the first radiating portion with the ground portion and a second connecting portion connecting the first radiating portion and the second radiating portion, the second radiating portion having a pair of arms; and  
a feeder including an inner core connecting to the second connecting portion and an outer shield connecting to the ground portion.
2. The dual band antenna as claimed in claim 1, wherein the first radiating portion, the first and second connecting portions, the ground portion and the feeder together constitute a PIFA.
3. The dual band antenna as claimed in claim 2, wherein each arm of the second radiating portion has an L-shaped structure and is disposed symmetrically at two opposite sides of the second connecting portion.
4. The dual band antenna as claimed in claim 3, wherein the PIFA operates at a lower frequency band, and the second radiating portion operates at a higher frequency band.
5. The dual band antenna as claimed in claim 1, wherein the second connecting portion has a feed portion on a free end thereof, and the inner core of the feeder is connected to the feed portion.
6. The dual band antenna as claimed in claim 1, wherein the ground portion has a

projection, and the outer shield of the feeder is connected to the projection.

7. A dual band antenna comprising:

an insulative substrate;

a conductive element formed on the substrate and including:

a ground portion;

a first radiating portion spaced from the ground portion;

a first connecting portion connected between the first radiating portion and the ground portion;

a second radiating portion located between said ground portion and said first radiating portion;

a second connecting portion spaced from the first connecting portion and mainly connected between the first radiating portion and the second radiating portion;

a feed portion extending around an end of the second connecting portion close to the ground portion; and

a feeder including an inner core connecting to the feed portion and an outer core connecting to the ground portion.

8. The antenna as claimed in claim 7, wherein said second radiating portion includes two arms respectively extending on two sides of said second connecting portion symmetrically.

9. The antenna as claimed in claim 7, wherein said outer core is connected to a projecting portion which extends toward the second radiating portion from a main body of the ground portion.

10. The antenna as claimed in claim 9, wherein said feeder essentially extends

along a direction parallel to the first radiating portion.

11. The antenna as claimed in claim 8, wherein said two arms are of an L-shaped configuration.

12. The antenna as claimed in claim 11, wherein said L-shaped configuration extends toward the first radiating portion and away from the ground portion.

13. A dual band antenna comprising:

an insulative substrate;

a conductive element formed on the substrate and including:

a ground portion;

a first radiating portion spaced from the ground portion in a parallel relation;

a second radiating portion located between said ground portion and said first radiating portion;

a Z-like connecting portion connected between the first radiating portion and the second radiating portion;

a feed portion extending around an end of the connecting portion and close to the ground portion;

a projection extending from a main body of the ground portion toward the second radiating portion; and

a feeder including an inner core connecting to the feed portion and an outer core connecting to the projection; wherein

said feed portion and said projection cooperate with said feeder to form another Z-like connection between the ground portion and the second radiating portion.

14. The antenna as claimed in claim 13, wherein said Z-like connecting portion

and said Z-like connection commonly form a multiple steps structure thereof.

15. The antenna as claimed in claim 14, wherein said second radiating portion is of a U-shaped configuration which is symmetrically intersected with said multiple steps structure.

16. The antenna as claimed in claim 15, wherein said U-shaped configuration faces the first radiating portion.